

AMENDMENT TO THE CLAIMS:

Claims 1-16 (previously canceled).

Claims 17-28 (canceled).

28. (new) A soil compaction roller comprising a hub structure defining a central axis of rotation and a multi-sided, out-of-round, peripheral compacting surface which has a width measured parallel to the axis and which is fixed non-adjustably to an outer periphery of the hub structure so as to be capable of rolling in a direction of rolling over a soil surface that is to be compacted when the hub structure rotates about the central axis, the compacting surface being defined by a plurality of angularly spaced salient points and an equal plurality of compacting faces each of which is generally outwardly convex in shape and each of which extends from one salient point to an adjacent salient point, each salient point extending parallel to the central axis, the cross-section of each compacting face arranged such that an instantaneous center of rotation of each compacting face, where that compacting face contacts the soil surface during rolling, moves continuously about the full extent of the compacting face, whereby the roller applies a continuous kneading action to the soil surface as it rolls over the soil surface, each compacting face including a re-entrant portion extending from a respective salient point in the direction of rolling and defining a tangent lying outside of an imaginary straight line extending from such salient point to the next salient point in the direction of rolling.

29. (new) A soil compaction roller according to claim 28 wherein compacting faces on either side of each salient point are symmetrical with respect to one another about a plane containing the central axis and that salient point.

30. (new) A soil compaction roller according to claim 28 wherein each compacting face is symmetrical about an imaginary radial line extending through the compacting face at a location thereof situated midway between the salient points lying on opposite sides of that compacting face.

31. (new) A soil compaction roller according to claim 30 wherein the salient points are equi-angularly spaced about the central axis and are equidistant from that axis.

32. (new) A soil compaction roller according to claim 31 wherein each compacting face is smoothly, convexly curved.

33. (new) A soil compaction roller according to claim 31 wherein each compacting face comprises a plurality of flat facets which in combination form an outwardly convex shape.

34. (new) A soil compaction roller according to claim 31 further comprising a first series of wear plates defining the salient points and a second series of wear plates defining the compaction faces; the wear plates of the second series being shorter in a circumferential direction of the roller than the wear plates of the first series, and being disposed in respective spaces formed between successive wear plates of the first series.

35 (new) A soil compaction roller according to claim 34 wherein the hub structure comprises a central hub, a plurality of spokes extending outwardly from the central hub, and stiffening ribs carried by the spokes at the periphery of the hub structure, to which ribs the wear plates are mounted.

36. (new) A soil compaction roller according to claim 28, further comprising a first series of wear plates defining the salient points and a second series of wear plates defining the compaction faces; the wear plates of the second series being shorter in a circumferential direction of the roller than the wear plates of the first series, and being disposed in respective spaces formed between successive wear plates of the first series.

37. (new) A soil compaction machine including a pair of soil compaction rollers mounted side by side with one another, each soil compaction roller comprising a hub structure defining a central axis of rotation, a multi-sided, out-of-round, peripheral compacting surface which has a width measured parallel to the axis and which is fixed non-adjustably to an outer periphery of the hub structure so as to be capable of-rolling over a soil surface that is to be compacted when the hub structure rotates about the central axis, the compacting surface being defined by a plurality of angularly spaced salient points and an equal plurality of compacting faces each of which is outwardly convex in shape and each of which extends continuously from one salient point to an adjacent salient point, each salient point extending parallel to the central axis, the cross-section of each compacting surface being constant across a width thereof measured parallel to the axis and being arranged such that an instantaneous center of rotation of each compacting face, where that compacting face contacts the soil surface during rolling, moves continuously about the full extent of the compacting face, whereby the roller applies a continuous kneading action to the soil surface as it rolls over the soil surface, wherein each compacting face is symmetrical about an imaginary radial line extending through the compacting face at a location thereof situated midway between the salient points lying on opposite sides of that compacting face.

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